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10/530,818	04/08/2005	Manfred T. Reetz	100716-61 (KGB)	4327

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EXAMINER

MCDONOUGH, JAMES E

ART UNIT	PAPER NUMBER
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1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,818	Applicant(s) REETZ ET AL.	
	Examiner JAMES E. MCDONOUGH	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 2,7,8 and 12-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/29/2008</u> | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3-6, 9 and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reetz et al.; Angew. Chem. Int. Ed. **2000**, 39, (21), 3889-3890.

Regarding claim 1

Reetz teaches the use of two different ligands bonded to a transition metal (second page, first full paragraph) (note that diastereomers are different than enantiomers).

Even arguedo that diastereomers are not constitutionally different they are not the same as enantiomers. For example if two chiral ligands that were exact enantiomers of each other were placed on a metal center one would expect that the metal center would not be capable of achieving enatiomeric excess in a catalysis reaction as there would be no preference for either product enantiomer from the prochiral reagent, as the catalyst would be “meso”. On the other hand if two diastereomers of one another or two different chiral ligands were placed on a metal center, the skilled artisan would appreciate that this would either complement or block the approach to the metal center by a substrate, and the skilled artisan would readily appreciate that in some instances, using certain reagents, a mixture of two different ligands or diastereomeric ligands, would increase the activity and/or stereoselectivity of the catalyst for a given prochiral reagent. Therefore depending on the given situation and reagent selected, the skilled artisan would have found it prima facie obvious at the time of invention to change/select certain ligands and sometimes to use mixtures of different ligands, based on the knowledge generally available in the art and the teaching of the reference. And that by doing so one could control the size and shape selectivity of the pocket along with being able to increase probability to attack of the reagent from a certain side to achieve high enantiomeric excess (models i.e. computer and physical will help one to see the three-

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dimensional shape and predict the transition state, which is critical to predicting and tuning the catalyst, and is well within the level of the artisan of ordinary skill in the art of asymmetric catalysis, and considered to be routine).

Regarding claim 3

Reetz teaches that the two mono-phosphorous ligands are chiral (see 8a and 8b).

Regarding claims 4-6

See 8a and 8b

Regarding claims 9 and 10

Reetz teaches the use of Rhodium as the metal atom (see table 2).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reetz et al.; Angew. Chem. Int. Ed. **2000**, 39, (21), 3889-3890 as applied to claims 1 and 3 above, in further view of Claver et al.; Chem. Commun., 2000, 961-962.

Reetz teaches the use of the ligand from claim 11, where W = OCH₃. Although, Reetz does not teach the other ligand in the group, Reetz does teach or at least make obvious, that two different ligands can be used. However, because Claver teaches that the ligand from claim 11, where W = Me or t-Bu, are conventional ligands to use on rhodium metal for asymmetric hydrogenation, it would have been prima facie obvious to one of ordinary skill in the art at the time of invention, to modify the teachings of Reetz, by using methyl and tert-butyl as substituents on the phosphorous ligand, as suggested by Claver, with a reasonable expectation of success.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3-6, and 9-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 6, 7 and 10 of U.S. Patent No. 7,265,237. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the reference fail to teach the use of two different ligands.

Claims 1, 3-6 and 9-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 6, 7 and 10 of U.S. Patent No. 7,265,237 in view of Reetz et al.; Angew. Chem. Int. Ed. **2000**, 39, (21), 3889-3890. Although the conflicting claims are not identical, they are not patentably

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distinct from each other because the claims of the '237 fail to teach the use of two different ligands, however, as shown in Reetz et al the use of two different ligands is conventional and can lead to 100 % conversion with 98.8 % enantiomeric excess.

Response to Arguments

Applicants argue that their amendment to the claim “constitutionally different” overcomes the claim because the definition of constitution is different than that of structure and excludes the use of enantiomers. This is not persuasive because while enantiomers may be excluded and this is understood (i.e. two different enantiomers, would not perform as an asymmetric catalyst on the same metal center, based on the above reasoning), the reference is teaching the use of two different diastereomers.

Applicants argue that this amendment re-establishes unity of invention. This is not persuasive for the reasons given above.

Applicants amendment to claim 11, overcomes the 112 rejection, therefore the rejection has been withdrawn.

Applicants argue that the reference does not anticipate the claims based on the amendment to claim 1. This is not persuasive for the reasons given above, but even *arguendo* the rejection has been changed to a 102/103 rejection, so the claims are seen as at least obvious.

Applicants argue that since the 102 rejection is not valid that the 103 rejection based on that over claim 11, is also invalid. These arguments have been fully considered but are not persuasive for the reasons given above.

Applicants argue against the double patenting rejection. These arguments have been fully considered but are not persuasive for the reasons given above.

Applicants argue that the data in the specification prove the unexpected results. This is not persuasive for at least the following reasons:

- 1.) The results are not fully commensurate in scope.
- 2.) These results though better in some instances are not seen as unexpected or surprising based on the reasoning given above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES E. MCDONOUGH whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/J.A. LORENZO/

Supervisory Patent Examiner, Art Unit 1793

JEM 12/26/2008